REMARKS

Claims 1, 3-6 and 9-22 are currently pending in the subject application, and are presently under consideration. Claims 1, 3-4, 6, 9-10 and 12-22 are rejected. Claims 5 and 11 have been indicated as allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Favorable reconsideration of the application is requested in view of the amendments and comments herein.

I. Interview Summary

Applicant appreciates the courtesy extended by the Examiner to discuss the Office Action in the teleconference of March 3, 2009. The interview was divided between discussing the claims relative to the cited references and to issues relating to the drawings in the application.

The Examiner agreed that the reference to 112 first paragraph rejections on page 4 of the Office Action was made in error.

While no specific agreement was reached regarding the allowability of any claims, several differences between what is recited in claim 1 (and related claims) and the prior art were discussed in detail. Applicant's representative and the Examiner also discussed how in view of differences in the approach in secondary references of Dufresne and Oakley, their combination in the manner being suggested in the Office Action seemed unlikely. The Examiner expressed an understanding of these differences.

Applicant's representative and the Examiner also discussed issues relating to the drawings. In particular, it was discussed that an incorrect set of drawings appears to have been inadvertently filed in the application. Due to issues with the drawings, the Examiner has not yet entered any amendments to the drawings.

II. Amendments to the Drawings

It is understood that previously submitted replacement drawings have not been entered in to the subject application. Accordingly, submitted herewith is a Replacement set of drawings, including FIGS. 1-5, which are to correct what appears to have been an inadvertent error in filing an incorrect set of drawings when the application was originally filed.

These errors were discussed in detail with Examiner Brown during the telephone conference on March 3, 2009. As discussed, the originally filed set of drawings appears to have been filed in error and this replacement set of drawings are fully supported by the Specification such that no new matter is being added by this Amendment.

Amendments to Figure 1 are marked in red on sheet 1/6 of the attached Annotated Sheet of drawings. The amendments to FIG. 1 have been made so that the FIG. 1 accurately depicts what is described in the Specification at page 1, lines 16-30 by providing correct reference numbers in the drawings. The changes to FIG. 1 are fully supported in the Specification at page 1, lines 16-30, and no new matter has been added.

Replacement sheet 2/6 is being submitted to correct errors in originally filed FIG. 2. Amendments to Figure 2 are marked in red on sheet 2/6 of the attached Annotated Sheet of drawings. Originally filed FIG. 2 was submitted in this application in error, which is readily apparent upon inspecting the description of FIG. 2 in the originally filed specification. By this amendment is effectively being deleted from the application and being replaced by Replacement FIG. 2. The description of FIG. 2 in the specification beginning at page 2, line 5, describes what is depicted in originally filed Figure 3 (sheet 3/6), but originally filed FIG. 3 has its reference numbers increased by adding 100. Accordingly, the replacement sheet 2/5 for FIG. 2 is substantially identical to originally filed Figure 3, but has its reference numbers decreased by subtracting 100. Support for this Amendment can be found in originally filed FIG. 3 and in the Specification at page 2, lines 5-20. No new matter is being added by this amendment.

New sheet 3/6 is being submitted to correct errors in originally filed FIG. 3. Originally filed FIG. 3, which was labeled as prior art, should have been filed was filed in this application as FIG. 2 as discussed above. As discussed with the Examiner, this error is readily apparent since there is no mention of FIG. 3 in the Background section as prior art. Additionally, the brief description of the drawings at page 3, lines 7-8, introduces FIG. 3 as "a block diagram of a reverse path within a broadband communications system **in accordance with the present invention** (emphasis added)." The Detailed Description of a Preferred Embodiment section of the application, at page 3, lines 18-19, begins by mentioning that "The present invention is directed to a "burst-mode" digital transmitter that includes a carrier-detect circuit and is illustrated in FIG. 3." Therefore any indication that originally filed FIG. 3 was prior art was an

inadvertent error. Additionally, the subject matter shown in FIG. 3 is fully supported by the specification at page 3, line 18, through page 4, line 4; page 4 lines 24-33; and page 5, line 23, through page 6, line 13. No new matter is being added by this amendment.

New sheet 4/6 is being submitted to correct an inadvertent error regarding originally filed FIG. 4, which drawing appears to have been submitted in error. The New sheet 4/5 is fully supported in the Specification at page 4, lines 5-33. No new matter is being added by this amendment.

Replacement Sheet 5/6 is being submitted to correct errors in originally filed FIG. 5. Amendments to FIG. 5 are marked in red on sheet 5/6 of the attached Annotated Sheet of drawings. Support for the changes to FIG. 5 can be found in the Specification at page 4, line 34, through page 5, line 6. No new matter is being added by this amendment.

Please also cancel Figure 6, which corresponds to sheet 6/6 of the originally filed application. Submitted herewith is an Annotated Sheet 6/6 showing that the figure has been deleted from the application pursuant to MPEP 608.02(t). Applicant's Amendment and Response filed on September 19, 2008, previously amended the Specification to reflect the cancellation of this Figure. If such Amendments to the Specification have not been entered yet, their entry is respectfully requested.

Since the changes in these drawings are fully supported and accurately depict what is described in the originally filed Specification at pages 1-6, no new matter is being added by any of the changes to the drawings. Entry of the replacement set of drawings is respectfully requested.

III. Rejection of Claims 1, 3, 6, 9, 12, 14-15 under 35 U.S.C. 103(a)

Claims 1, 3, 6, 9, 12, 14-15 have been rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,485,197 to Hoarty, (hereinafter, "Hoarty") in view of Admitted Prior Art Fig. 3, and further in view of U.S. Patent No. 4,920,533 to Dufresne (hereinafter, "Dufresne") and U.S. Patent No. 3,886,454 to Oakley, (hereinafter , "Oakley"). Applicant traverses this rejection for the following reasons.

As discussed with the Examiner, the "Prior Art Fig. 3" being relied upon in the Office Action was submitted in error and now corresponds to FIG. 2 by this amendment.

Claim 1 has been amended to provide to proper antecedent basis. As discussed with the Examiner, there are significant differences between the system of claim 1 and the combination of cited references. Similar to as was done during the telephone interview, the following discussion will identify particular differences between what is recited in claim 1 and each of the cited references individually as applied in the Office Action. This preliminary analysis will demonstrate that in view of the combined teachings that the system of claim 1 is not obvious. The non-obviousness of claim 1 further stems from the benefits of implementing such burst mode control in an optical transmitter including, for example, where a cable television system can include a reverse optical receiver that can receive and passively combine reverse digital optical signals from a plurality of optical nodes.

The particular context and purpose of each of the respective references militates against combining then in the manner being suggested. First, the portions of Hoarty being relied upon as corresponding to a reverse optical transmitter are an optical transmitter 43C and an RF combiner 47, whereas each of the approaches in Dufresne and Oakley appears limited to RF (not optical) transmission. Additionally, in contrast to the reverse optical receiver of claim 1, Hoarty discloses a one-to-one relationship between the optical receiver (the unlabeled block connected to receive fiber trunk 42C) and the optical transmitter 43C. Nothing in Hoarty (or any other art of record) suggests a different relationship between reverse optical transmitter and the receiver. Instead, as discussed during the telephone interview, reference to Hoarty FIGS. 7, 9 and 15, appears consistent with the prior art approach described in the Background section the present application having one optical receiver for each optical transmitter further making the addition of Dufresne and Oakley without purpose or motivation other than improper hindsight. Significantly, Hoarty in FIG. 9 expressly teaches that the hub combiner 47 combines upstream data channels by performing frequency translation on the RF signals from trunks A, B and C such that the data channels occupy defined spectral regions in a single spectrum. Hoarty, at Col. 9, lines 36-45.

In Dufresne, trunk filters 7 are connected in series with various branches of the distribution network. In particular, the Dufresne discloses that the trunk filters 7 are placed on the trunk between bidirectional amplifiers 4 of the branches. See FIG. 1 of Dufresne. Neither Dufresne nor Hoarty teaches or suggests placing such trunk filters 7 in a reverse transmitter of an

optical node, and the Office Action is devoid of any other evidence that would support such a position. Any reasonable modification of Hoarty in view of Dufresne would (at most) only enable one of ordinary skill in the art to place the trunk filter in series with the branches of the distribution network in Hoarty. In sharp contrast, claim 1 recites that the carrier-detect circuit is part of a reverse optical transmitter that is included in a plurality of optical nodes.

Additionally, the trunk filters 7 of Dufresne are located in the branches such that television signals and downstream data signals pass through the trunk filters 7 in the downstream direction. Dufresne, Col. 5, Lines 41-43. Although, the trunk filters 7 of Dufresne are transparent in the downstream direction, it would be unnecessary and redundant to for the trunk filters 7 to be placed in the headend as the Office Action suggests. Dufresne already discloses a filter 10 in the headend. See FIG. 1 of Dufresne. Specifically, Dufresne teaches that a receive bandpass filter 10 is connected to a collision detector 12. Dufresne, Col. 5, Lines 51-53. Rather than the receive bandpass filter 10 being transparent to downstream data (as is the filter 7), Dufresne teaches that busy bits from the filter 10 are interleaved (multiplexed) into downstream data stream, which is applied to modulator 8. Dufresne, Col. 5, Lines 63-65. Therefore, if the receive bandpass filter 10 of the headend were replaced with trunk filter 7, the system of Dufresne would fail to function as disclosed.

The Office Action contends that the deficiencies of Hoarty and Dufresne are alleviated by Oakley's teaching of a squelch circuit. As discussed during the interview, however, Oakley fails to provide any teaching that such squelch circuit would be part of a reverse optical transmitter. Instead, similar to as explained with respect to Dufresne, the squelch circuit is located at a line extender return amplifier position adjacent a bridging amplifier. Oakley at Col. 5, lines 40-45. Therefore, since neither Hoarty nor Oakley teaches placing a squelch circuit in a transmitter of an optical node and no other evidence of record supports such a position, the legal conclusion of obviousness in the Office Action is not based on a rational underpinning that can sustain the obviousness rejection.

Furthermore, there appears no reasonable expectation to successfully combine the transmitter of Hoarty, filter of Dufresne, and squelch circuit and switch of Oakley in the manner being suggested in the Office Action. The trunk filter 7 of Dufresne remains shut off until the trunk filter 7 senses the presence of an upstream carrier signal within the bandwidth of the trunk

filter 7, whereupon the trunk filter 7 immediately opens. Conversely, Oakley discloses the switch 82 of Oakley responds to a sensor 83 and the time it takes the sensor 83 to activate the switch 82, necessitates the delay line 84. The solution of the trunk filter 7 thus may be considered a superior solution to improving upstream performance in Dufresne than imposing the delay line 84 of Oakley. In fact, imposing an unnecessary delay on the trunk filer is counterproductive to the solution put forth in Dufresne and would create an inoperative device if combined in the manner being suggested. The proposed combination of Oakley and Dufresne thus appears counter-intuitive and would not provide predictable results to provide the system of claim 1. Therefore, one of ordinary skill in the art would not combine Oakley with Dufresne to arrive at the modification suggested by the Office Action.

Regarding claim 3, which depends from claim 1, the differences between the claimed system and the approaches cited references are expanded upon. In particular, claim 3 recites additional features of the reverse optical receiver introduced in claim 1 and adds a headend that is coupled to the reverse optical receiver and how such features operate due to a burst-mode transmission from each of the optical nodes. As recited in claim 1, the reverse optical receiver is coupled to the plurality of optical nodes through the digital network, which is in sharp contrast to the approach in the cited references being relied upon. For instance, Hoarty discloses a single optical transmitter coupled through a fiber trunk 42C to a corresponding optical receiver (unlabeled block in FIG. 15). Since no such communication system is taught or suggested in the cited references and no other evidence is offered to support the rejection, claim 3 is patentable.

For the reasons discussed above, claim 1 is not obvious over Hoarty in view of Dufresne and Oakley. Reconsideration and allowance of claim 1 and claims 3-4, which depend from claim 1, are respectfully requested.

Claim 6 includes similar subject matter to that of amended claim 1. Accordingly, for similar reasons as discussed above with respect to amended claim 1, claim 6, as well as claims 9, 12, and 14-15 that depend therefrom, are not obvious in view of Hoarty, further in view of Dufresne, further in view of Oakley.

IV. Rejection of Claims 4, 10 and 13 under 35 U.S.C. 103(a)

Claims 4, 10 and 13 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Hoarty, Admitted Prior Art Fig. 3, Dufresne and Oakley, and further in view of U.S. Patent No. 5,850,218 to LaJoie, (hereinafter, "LaJoie"). Applicant traverses this rejection for the following reasons.

Claim 4 depends from claim 1 and claims 10 and 13 depend from claim 6. Since LaJoie does not cure the deficiencies discussed above with respect to claim 1 and no other evidence has been proffered to support the obviousness position, claims 4, 10 and 13 are patentable.

V. Rejection of Claims 16-19 and 22 under 35 U.S.C. 103(a)

Claims 16-19 and 22 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Hoarty, Admitted Prior Art Fig. 3, Dufresne. Applicant traverses this rejection for the following reasons.

Claim 16 includes similar subject matter to amended claim 1, in that reverse analog electrical signals are converted to reverse digital optical signals, and the reverse digital optical signals are transmitted upstream to a digital network only when the presence of a reverse carrier signal is detected by a carrier-detect circuit. Since, for the reasons explained above with respect to amended claim 1, such transmission of reverse digital optical signals is not taught or suggested in the combination of references and no other evidence has been presented to support the obviousness position, claim 16 is patentable. Accordingly, reconsideration and allowance of claim 16 and its dependent claims 17-22 are respectfully requested.

VI. Rejection of Claims 20-21 under 35 U.S.C. 103(a)

Claims 20-21 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Hoarty, Admitted Prior Art Fig. 3, Dufresne, and further in view of LaJoie. Applicant traverses this rejection for the following reasons.

Hoarty does not disclose reverse digital optical signals are formatted in packets and provided to one of the analog headend and the digital headend based on analysis of packet header information by a descriminator circuit, as recited in claim 21. Instead, of a descriminator circuit,

Hoarty discloses address packets are managed using slotted ALOHA protocols. Col. 9, Lines 63-65. In fact, a descriminator is not shown in Hoarty, Dufresne, Oakley, or LaJoie, taken individually or in combination. Therefore LaJoie does not cure the deficiencies of Hoarty, Dufresne and Oakley. Furthermore, claim 21 includes similar subject matter as claims 5 and 11 which have been indicated as containing allowable subject matter. Accordingly, claim 21 is patentable over Hoarty in view of Dufresne, further in view of Oakley, further in view of LaJoie.

VII. Allowable Subject Matter

Claims 5 and 11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Applicant appreciates the indication of allowability.

VIII. CONCLUSION

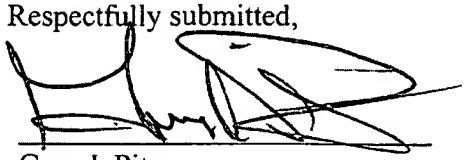
In view of the foregoing remarks, Applicant respectfully submits that the present application is in condition for allowance. Applicant respectfully requests reconsideration of this application and that the application be passed to issue.

Should the Examiner have any questions concerning this paper, the Examiner is invited and encouraged to contact Applicant's undersigned attorney at (216) 621-2234, Ext. 106.

No additional fees should be due for this response. In the event any fees are due in connection with the filing of this document, the Commissioner is authorized to charge those fees to Deposit Account No. 20-0090.

I hereby certify that this correspondence is being transmitted to the U.S. Patent and Trademark Office via electronic filing on March 30, 2009.

Respectfully submitted,



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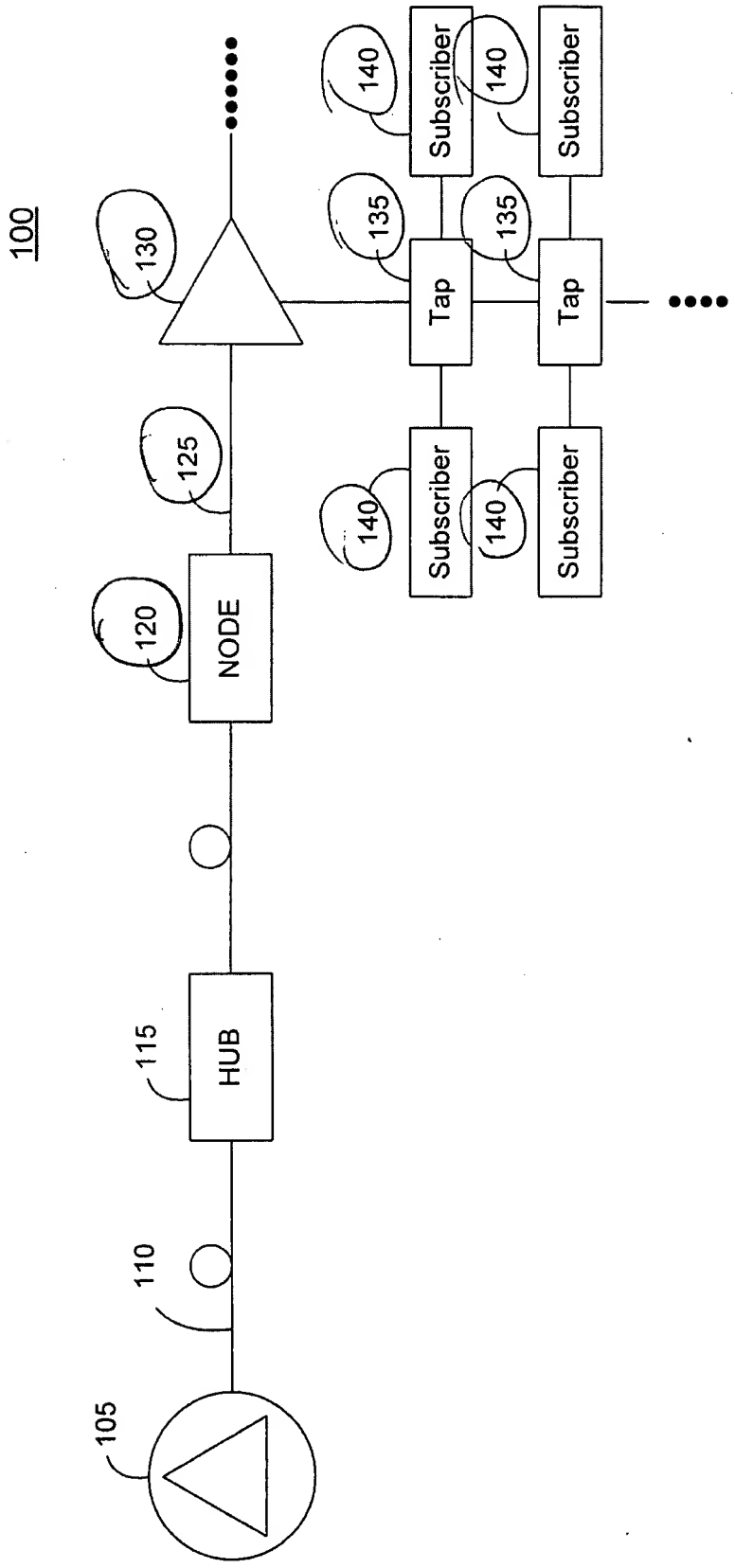
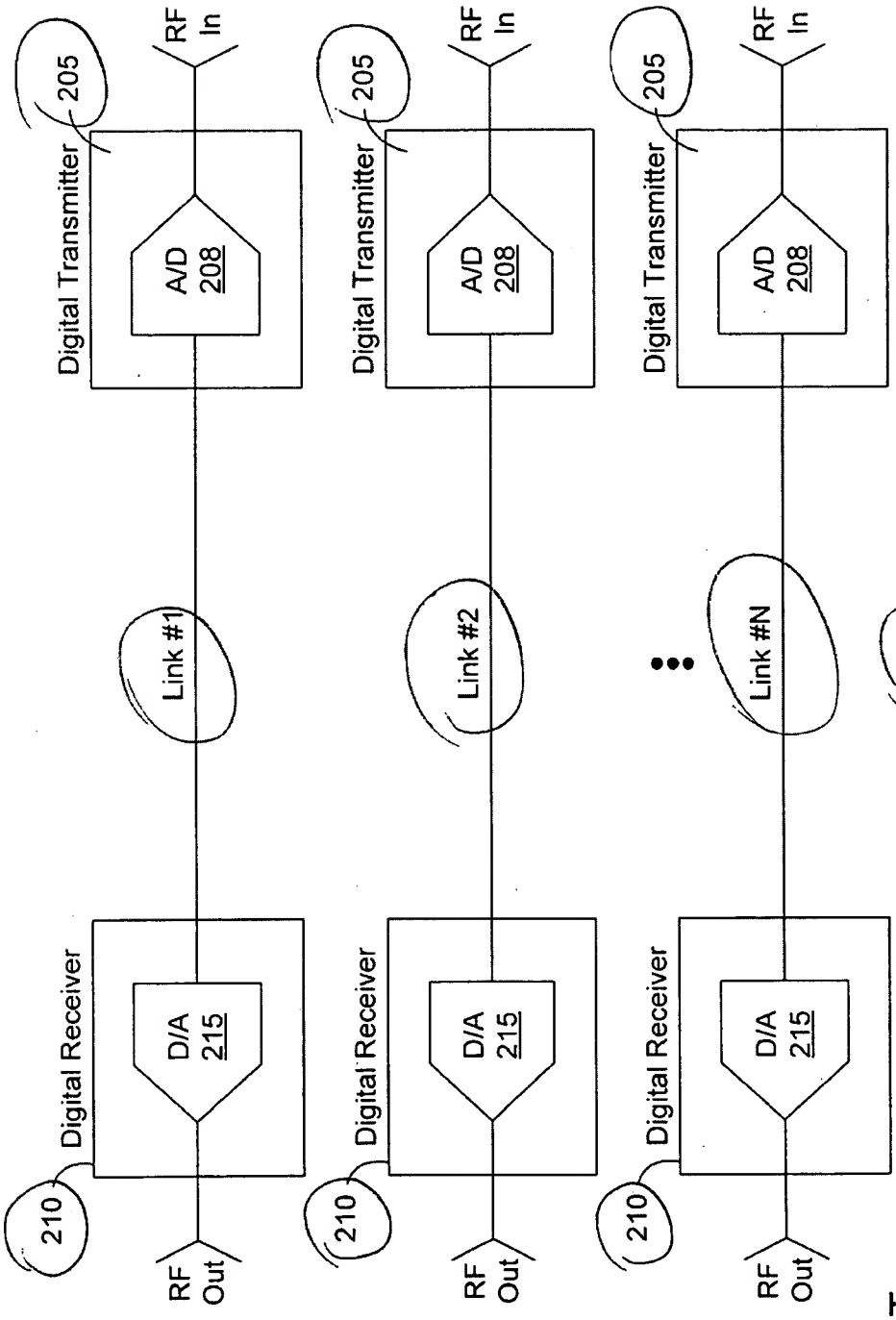


PRIOR ART

FIG. 1

ANNOTATED SHEET
App. Ser. No. 09/840,767

2/6



PRIOR ART

FIG. 2

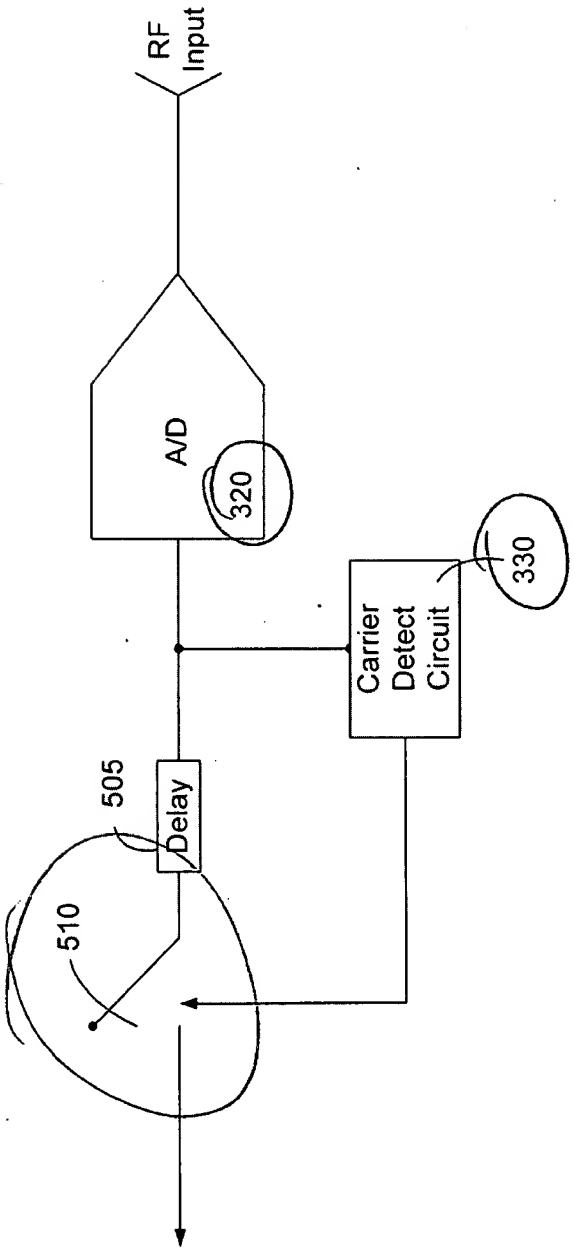


FIG. 5